

WE16 Presentation Submission

Submitter Contact Information		
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***Session Title**

International Space Station Configuration Analysis & Integration (Lightning Talk)

***Session Description (limited to 100 words)**

Ambitious engineering projects, such as NASA's International Space Station (ISS), require dependable modeling, analysis, visualization, and robotics to ensure that complex mission strategies are carried out cost effectively, sustainably, and safely. Learn how Booz Allen Hamilton's Modeling, Analysis, Visualization, and Robotics Integration Center (MAVRIC) team performs engineering analysis of the ISS Configuration based primarily on the use of 3D CAD models. To support mission planning and execution, the team tracks the configuration of ISS and maintains configuration requirements to ensure operational goals are met. The MAVRIC team performs multi-disciplinary integration and trade studies to ensure future configurations meet stakeholder needs.

***Please indicate which conference track to which your submission best aligns:**

- | | |
|---|---|
| <input type="checkbox"/> Advocating for Change | <input type="checkbox"/> Career Management & Life Transitions |
| <input type="checkbox"/> Entrepreneurship | <input type="checkbox"/> Inclusion & Cultural Awareness |
| <input checked="" type="checkbox"/> Innovation & Disruption | <input type="checkbox"/> K-12 Outreach |
| <input type="checkbox"/> Strategic Leadership | <input type="checkbox"/> SWE Leadership |
| <input type="checkbox"/> Women in Academia | <input type="checkbox"/> Women in Government & Military |

***Learning Objective 1 (limited to 75 words) – At the end of this session participants will... (be specific!)**

Understand how configuration is planned and analyzed for the International Space Station (ISS) using 3D CAD modeling, simulation, and tool development for requirements verification. The ISS configuration includes scientific payloads and experiments as well as systems hardware, such as computers, support structure, radiators, life support equipment, solar arrays, and more. The MAVRIC team uses 3D modeling and additional tools to assess ISS configurations against requirements such as habitability, hardware interference and blockage, kinematic feasibility, etc.

***Learning Objective 2 (limited to 75 words) – At the end of this session participants will...(be specific!)**

Learn how systems engineering and integration techniques are used to perform multidisciplinary trade studies for configuration options of hardware on the International Space Station (ISS). The trade study of placement of a strength training exercise device on ISS included identification of evaluation criteria (cost, operational impacts, science impact, etc.) and stakeholders (astronauts, hardware owners, program management). Large projects require proper planning and execution of systems engineering techniques to ensure all stakeholder needs are evaluated thoroughly.

Learning Objective 3 (optional, limited to 75 words) – At the end of this session participants will...

Additional Comments

***Primary Contact & Bio (bio limited to 75 words)**

Rebekah Anchondo received her B.S. in Aerospace Engineering from the University of Texas and is working toward completion of her M.S. in Systems Engineering. Rebekah is a Systems Engineer with Booz Allen Hamilton, where she performs modeling and simulation activities to maintain the configuration of the International Space Station (ISS). Ms. Anchondo serves in a lead role in the Internal Volume Configuration group that maintains a safe and habitable environment for the crew aboard the ISS.

Primary Contact Additional Information

Additional contacts – if you have more than one speaker (e.g., panel discussion) and know the planned participants you can provide their information and bios (limited to 75 words each bio) here. If planning for additional participants (e.g., for a panel presentation) and participants are currently unknown, please provide an outline of the participants you will be seeking (e.g., level, specific

experience, etc.).